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ABSTRACT

In measuring personal attitudes toward drug users, it is important to minimize the fabrication of "socially desirable" responses. This drug attitude film was designed to reduce such fabrication by (1) presenting vivid stimuli that provoke strong feelings, (2) using oblique response scales, and (3) requiring quick responses. The author reviews the preliminary research on the instrument properties in two studies. In the first, data was collected for 21 college students on their responses to the different modes of presentation of the film material (printed transcripts of the film clips, silent presentation of the film, and presentation of the regular film). In the second study, pre- and post-responses to the DAF were obtained from 93 seniors in a required two-day drug education program. Responses indicate some significant changes from pre- to post-test. The author discusses whether or not use of the film is worthwhile due to the complication of administration. Excerpts from the film, "Grooving", are included. (Author/PC)

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The DRUG ATTITUDE FILM

Development of a Measurement Technique for Assessing Attitudes towards Adolescent Drug Users

A Preliminary Report Draft

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ATTITUDES TOWARD DRUG USERS - DEVELOPMENT OF A MEASUREMENT TECHNIQUE

Among the many domains of attitude concerning drugs and drug use, perhaps the one of most relevance for teachers and health professionals is that of attitude toward the drug user. Public school teachers and even health professionals are often inclined to refuse even to consider drug-related aspects of their responsibilities or to overreact in dysfunctional ways. Reduction of the tendency to reject drug users personally thus becomes virtually a prerequisite for implementation of other goals of drug education for professionals, including detection, referral, "first aid", counseling, and treatment.

In measuring personal attitudes toward drug users, it is important to minimize the fabrication of "socially desirable" responses--whether that means artificially vindictive or artificially liberal for the respondent's social reference group. The technique reported on here was designed to reduce such fabrication by:

a) presenting vivid stimuli that provoke strong feelings;
b) using response scales that are somewhat oblique, so that the "right" answer is not completely obvious;
c) requiring that responses be made quickly;

All three of these characteristics were realized by use of color-sound film presentations of real people with a "semantic-differential" response form paced by the film.

The Drug Attitude Film

The stimulus film was constructed from short clips taken from the 30-minute drug education film Grooving produced by the New York State Narcotics Control Commission. A fresh print of this film, which consists entirely of statements and discussions by adolescents during a weekend conference on drug use, was kindly provided by the producer for the purpose of dissection. A variety of clips were selected and spliced together with titles, numbers, and intervals of black. Continuous prints were then made from the spliced master. The drug attitude film (DAF) begins with a sample clip, not used for responses, which serves to set sound level of the projector and to familiarize the audience with what the stimuli will be like. Then, after a brief descriptive title, clips of five different students appear (about 10 seconds each) separated by three seconds. This preliminary sequence is intended to improve audience perception of the film characters and what they say on the subsequent numbered and timed run. After a second instructional title, "Now mark your responses to each student quickly," the five clips appear again--each preceded by a

Figure 1a. Film Format

GROOVING EXCERPTS

title	"The following brief scenes were taken from a film made at a weekend student meeting on drug use."
black	
title	"This scene for setting sound level only."
black	
scene	Student 1 in preliminary scene
black	
title	"Mark quickly your reaction to each student."
black	
title	"1"
scene	Student 1 [see attached transcript]
black	
title	"2"
scene	Student 2 [see attached transcript]
black	
title	"3"
scene	Student 3 [see attached transcript]
black	
title	"4"
scene	Student 4 [see attached transcript]
black	
title	"5"
scene	Student 5 [see attached transcript]
black	

Figure 1b. Film Transcript

STUDENT 1 [attractive blond girl]

"The way I felt when I first started getting into smoking was that I'd like to see what all of it was like, and be able to reject the things that were bad and take up the things that were good. And, you see, I think I'm the kind of person who can't take other people's advice about anything. I have to experience, I have to learn lessons by experience, experiencing things myself."

STUDENT 2 [white male]

"Look, see I know, man, that smoking pot...all that happens is you get high. The people get high, you sit around and groove, you listen to Country Joe and the Fish and you groove, that's all you do. You never, you never sit down and say, 'Well, man, people are... life is great, people are great, I'm learning how to love, now.' I mean, come on, man."

STUDENT 3 [black male]

"When somebody takes pot, snort, whatever they want to take, the grown-ups are saying, 'They're just trying to find a way out.' But what it is, you feel free, you feel like your mind is free. There's nothing tight in your mind that you're thinking about. You feel real happy."

STUDENT 4 [bearded white male]

"I'm curious about the drug experience, but I'm not curious enough to try it myself. I definitely don't want to try it myself. I don't think it's worth it."

STUDENT 5 [overweight white male]

"You say, 'Why do you like chocolate candy?' You dig it, right? Well, I like getting high. I'm not trying to find an escape, I just enjoy it."

Transcription of excerpts from a film of a student conference on drug use. Center for Curriculum Studies, University of Minnesota.

Figure 2. Response Form (revised)

CODE_____ M O F O

FILM RESPONSE FORM

STUDENT 1

weak O—O—O—O—O—O—O strong
beautiful O—O—O—O—O—O—O ugly
foolish O—O—O—O—O—O—O wise
exciting O—O—O—O—O—O—O dull
enemy O—O—O—O—O—O—O friend

STUDENT 2

weak O—O—O—O—O—O—O strong
beautiful O—O—O—O—O—O—O ugly
foolish O—O—O—O—O—O—O wise
exciting O—O—O—O—O—O—O dull
enemy O—O—O—O—O—O—O friend

STUDENT 3

weak O—O—O—O—O—O—O strong
beautiful O—O—O—O—O—O—O ugly
foolish O—O—O—O—O—O—O wise
exciting O—O—O—O—O—O—O dull
enemy O—O—O—O—O—O—O friend

STUDENT 4

weak O—O—O—O—O—O—O strong
beautiful O—O—O—O—O—O—O ugly
foolish O—O—O—O—O—O—O wise
exciting O—O—O—O—O—O—O dull
enemy O—O—O—O—O—O—O friend

STUDENT 5

weak O—O—O—O—O—O—O strong
beautiful O—O—O—O—O—O—O ugly
foolish O—O—O—O—O—O—O wise
exciting O—O—O—O—O—O—O dull
enemy O—O—O—O—O—O—O friend

sequence number (1 to 5), and separated by 15 seconds of black leader. An "End" title appears after the final 15 seconds of black screen. Transcripts of the five clips and capsule descriptions of the characters appear in Figure 1b.

The Response Form

Five word pairs for the semantic differential were chosen on the basis of relevance expressed by drug educators, and extensive previous experience with semantic differential instruments and the factor analysis thereof. The sequence, polarity, and response format for the five scales are shown in Figure 2, the actual response sheet.

Preliminary Research on Instrument Properties

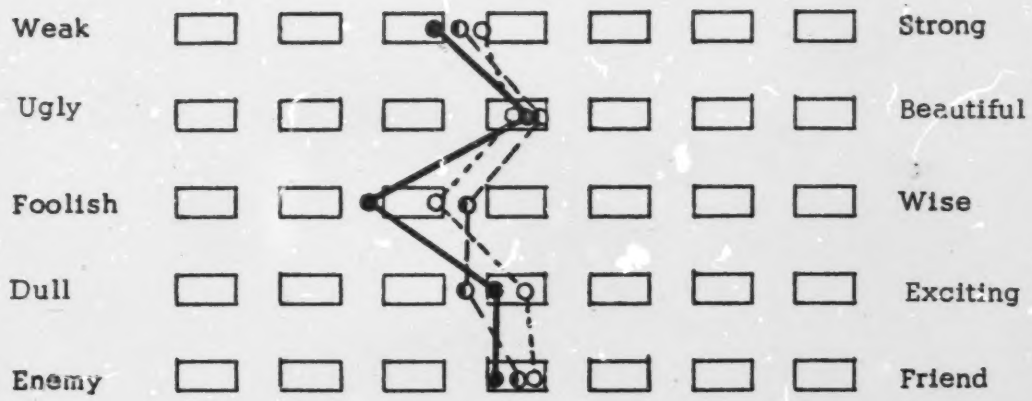
A small-scale study was made of responses to different modes of presentation of the film material. Complete data across three different modes were obtained for 21 students in a required public health course at the University of Minnesota. The group first responded (on the semantic-differential form) to printed transcripts of the five film clips (Figure 1). A week later, they responded the a silent presentation of the film. A week later still, they responded to the sound film, and a final week later they responded again to the sound film. Mean response profiles to the three forms of stimuli appear in Figure 3.

Multivariate analysis of variance of differences between first and second presentations are displayed in Table 1. The greatest differences, unsurprisingly, were between the silent and sound presentations. There were, however, also distinct differences between the transcript and sound-film presentations; the appearance of the characters was evidently having an effect on the reaction to what they said. There were, on the other hand, no differences between the two sound-film presentations--that is, there is good stability of mean response to the sound film.

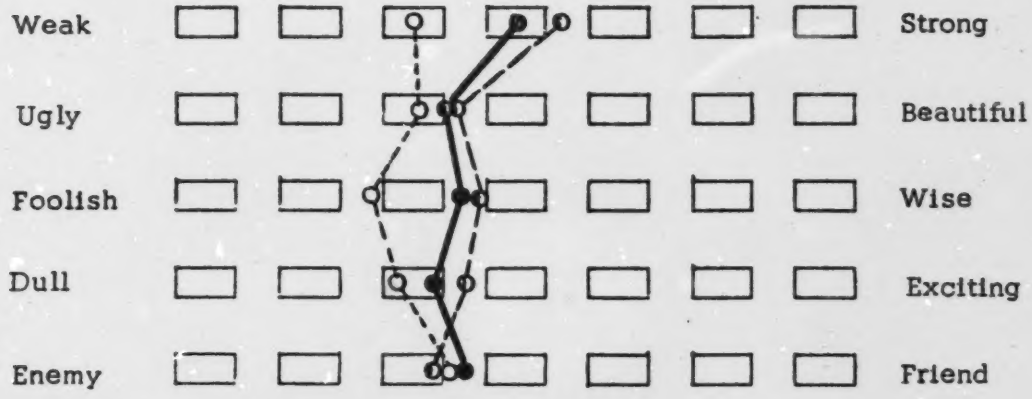
For characters 2 and 3, the mean response to the sound film is roughly midway between the mean responses to the printed transcript and the silent appearance, suggesting that the response to the total audio-visual stimulus is compounded of (or a compromise between) the purely visual and purely content components. For character 4, a bearded male who makes an anti-drug statement, the mean response profile for his sound appearance is identical to the profile for the transcript, implying that his statement far outweighs his appearance. For character 5, the profile for the sound film is on the "negative" side of both the transcript and silent film profiles, suggesting that the tone of his voice had an appreciable negative effect on the general impression. For character 1 (the sole female), the three profiles were almost identical, with the exception that the sound-film profile was distinctly more toward foolish on wise-foolish scale;

Figure 3. Response Profiles for Different Media

STUDENT 1



STUDENT 2



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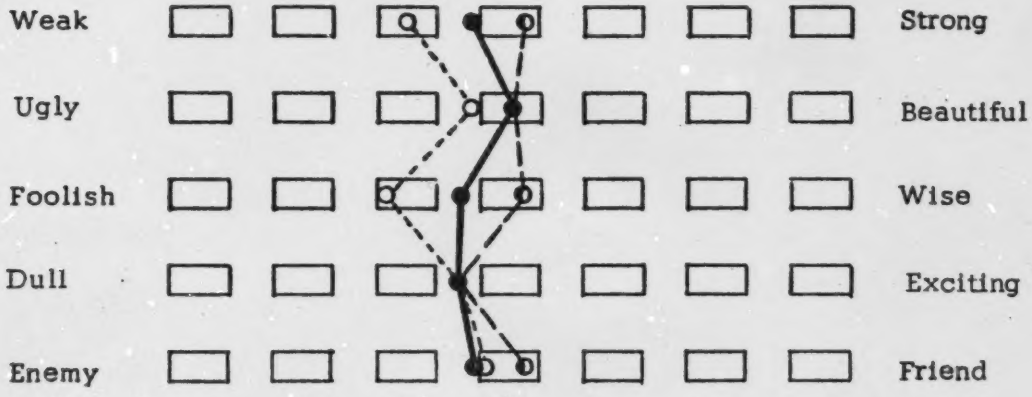
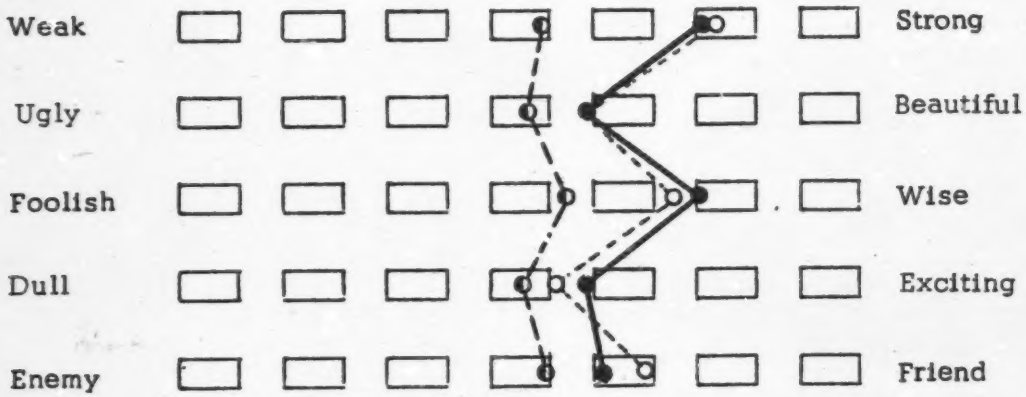
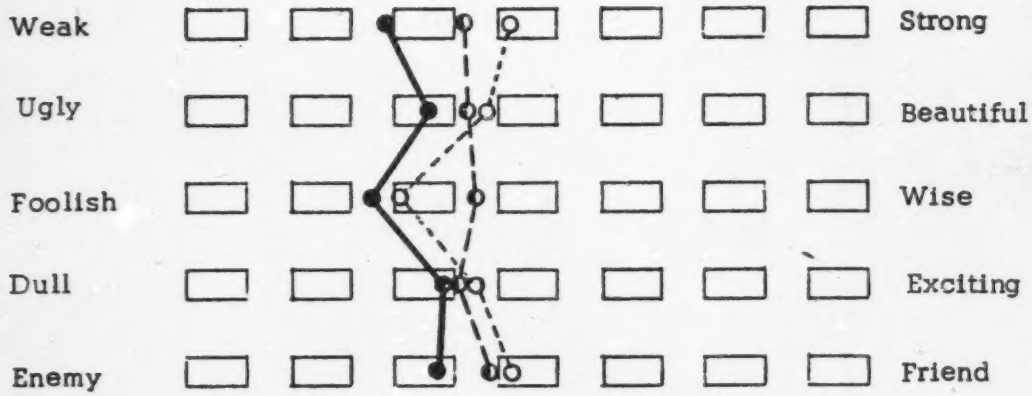


STUDENT 4



STUDENT 5



mean written ratings

mean silent film ratings

mean sound film ratings

Note -- The ugly-beautiful and dull-exciting scales had opposite polarities on the actual form.

Table 1. Significant Differences in Responses between Modes of Presentation

Character	Scale-	Significance Levels of p=.10 or Better		
		Transcript vs. Sound Film	Silent Film vs. Sound film	Sound Film vs. Sound Film
Student 1	strong			
	beautiful			.07
	wise		.02	
	exciting			
	friend			
Student 2	strong	.02		
	beautiful			
	wise	.05		
	exciting			
	friend			
Student 3	strong	.002		
	beautiful			.06
	wise	.04	.03	
	exciting			
	friend		.05	
Student 4	strong		.0001	
	beautiful		.06	
	wise		.0004	
	exciting			
	friend		.01	
Student 5	strong	.008	.10	
	beautiful	.07		
	wise		.005	
	exciting			
	friend	.006	.10	

apparently the tone of voice contributed only to an impression of foolishness, rather than to a general negative one.

(If one were greatly concerned with the contributions made by different stimulus modes, it would be possible to go a step further and have a presentation of the sound track only, allowing an assessment of the influence of tone of voice on statement content, and then the influence of visual appearance on combined content and tone of voice. Indeed, this would have been a reasonable alternative to the silent-sound approach reported above. For the present, the properties of the technique seem sufficiently well established to proceed to identification of composite scores.)

Composite Scores

Responses to the DAF were obtained at the beginning of a required two-day drug education program for 93 seniors in the College of Education (the first of the intervention groups described below). The 25 scores, resulting from the five scales on each of five film characters, were submitted to principal components analysis and subsequent varimax rotation. Five significant factors (i.e., factors with eigen values >1.0) were identified. Varimax rotation of all five factors produced factors that related fairly clearly to the five different characters, loadings for each being greatest for the scales of a single one of the characters, and all in the "good" direction. If differential attitudes to different types of characters were the intent of the study, these might have been adopted for further analysis. However, the intent was to identify a global response relating to pro-drug and anti-drug characters.

Varimax rotation of only the first two principal components produced two factors: one had loadings on all five characters, all in the "good" direction; the second had loadings on all characters, but in opposite directions for pro-drug and anti-drug characters. (The factor loadings are given in Table 2.) That is, the first represents a global response to people--and was therefore labeled "General Warmth," and the second represents a contrast in response to pro- and anti-drug characters--and was therefore labeled "Tolerance" (of pro-drug students). Data were obtained again at the end of the second day of the workshop, and the same factor analysis performed. The results were similar, and a simplified, integer set of weights (0,1,2,3 or 4) was chosen that were a compromise between the pretest and posttest factor loading patterns. These approximations to factor scores, intended to simplify scoring for general usage of the instrument, were used in subsequent analysis of the University of Minnesota data.

Internal-consitency reliabilities and inter-score correlations were found for the workshop described above and on a subsequent similar workshop 3 months later for other students. As would be expected, the correlation between the two quasi-factor scores

Table 2.

FACTOR LOADINGS FOR LARGEST TWO VARIMAX FACTORS

Scale		"Warmth" factor	"Tolerance" factor
Student 1	strong	.27	.51
	beautiful	.19	.39
	wise	.06	.66
	exciting	.32	.30
	friend	.45	.24
Student 2	strong	.58	-.10
	beautiful	.65	-.24
	wise	.49	-.19
	exciting	.51	-.19
	friend	.57	-.29
Student 3	strong	.43	.18
	beautiful	.69	.17
	wise	.49	.33
	exciting	.58	.08
	friend	.68	.14
Student 4	strong	.12	-.57
	beautiful	.45	-.37
	wise	.10	-.70
	exciting	.20	-.63
	friend	.16	-.59
Student 5	strong	.44	.48
	beautiful	.57	.23
	wise	.27	.58
	exciting	.45	.17
	friend	.48	.37
Percent of total variance:		20%	16%
Percent of common variance: (in 5 significant factors)		34%	27%

was nil for the group on which they were generated: .01 pre; -.01 post
In the subsequent workshop group, the two scores have modest .29 and .20
correlations (pre and post). The internal consistencies of the
scores were respectable, even if not admirable: .79 for Warmth,
.71 for Tolerance.

Intervention Studies

The DAF has been used for six different groups. Two of the groups are those already mentioned above: two-day mandatory workshops on drugs and drug use for seniors in the College of Education at the University of Minnesota. A third was a 3-week summer course in drug education offered to professionals in the health sciences. The fourth and fifth were 6-week and 12-week drug education components of public health courses conducted at Mankato State College. For all of these groups, the DAF was given at the very beginning of the program, before any other pretests and before any presentation of topics. For the two College of Education workshops, the DAF was given as the last event at the end of the three weeks. For the three groups at Mankato State College, the DAF was given at the end of 6 weeks (after the first half of the course) and again at the end of 12 weeks (after the whole course). In none of these situations was it practical to assign students to treatment and control groups, so that the only non-treatment comparison available is the third group at Mankato, which the instructor attests is "roughly comparable in population" to the other two groups there.

Revised Composites

When data for all of the abovementioned groups were collected, factor analyses of the responses were rerun to establish more broadly based composite scores. In the course of these analyses, a simplifying principle was adopted: "positive" responses were summed for each clip, and factoring performed on the resultant five scores. The five scores were given integer weights and summed t approximate the exact factor structure (Table 3a). The resulting summed composite scores, still called "general warmth" and "tolerance of users", are easier to calculate and explain--and give change results virtually identical to what was found using the original 25-term composites. Table 3b shows the correlations between the composites and each of the character scores.

On the pooled sample of ~1100 observations, the internal consistency of "tolerance" was .81 and the correlation of "warmth" and "tolerance" was -.09. The warmth score is essentially a discardable variable for this instrument; it betokens a positive reaction (or response bias) for all 5 clips, and serves mainly as a developmental foil against which to identify a tolerance score that was independent from general reaction to peopl

For the pooled sample, the mean tolerance score is about -20 and the standard deviation about 30. (The range possible is from -150 to +150.) If responses to all clips were identical, the tolerance mean would be 0. Changes in scale bias or in homogeneous response to all clips would not have any effect

Table 3a. Weights for Character Scores used for Summing Composites

Character	"Warmth"	"Tolerance"
Student 1	2	2
Student 2	2	-2
Student 3	2	1
Student 4	3	-3
Student 5	1	2

Table 3b. Correlations of Composites with Character Scores

(based on 1147 pooled observations)

Character	"Warmth"	"Tolerance"
Student 1	.57	.64
Student 2	.58	-.21
Student 3	.60	.48
Student 4	.32	-.73
Student 5	.44	.70

on this mean (since the weights for tolerance sum to 0). A preference for drug users would be + and a preference for non-users would be -. Although the mean score of -20 might thus be taken to imply a "negative tolerance", this really bears little interpretation because it would be heavily influenced by the particular characters in the clips. (Nonetheless, it may be useful for reporting to government agencies that would blanch at "liking drug users".)

Pre-Post Changes

Results of multivariate analysis of variance on the pre-post changes in "General Warmth" and "Tolerance" scores are given in Table 4. The mean scores for the groups are plotted in Figure 4. In every case, there is no significant change in General Warmth. Whether this score is a measure of "personality" or of "response bias" or "social desirability" is irrelevant for its role here--its stability indicates that repeated exposure to the instrument does not affect a change in global response to the characters in the film.

There is, however, a strongly significant change in the Tolerance score for all of the treatment groups. For the two groups of college undergraduates at the University, the Tolerance score increased during the program. That is, pro-drug students were viewed less unfavorably relative to anti-drug students. For the State College groups on the other hand, the tolerance score decreased. Both the population and treatment were different, so there is no way of attributing a cause for the opposite shift.

Is the use of film worth the complication of administration? Perhaps written statements would be just as effective as stimuli; maybe even the single phrase "Students who use drugs" would be sufficient as an attitude target. The summer group at the University of Minnesota was split for the pre and post assessments: one group responded to the sound film both times, and the other group responded to the transcript of the film. Also, each group was given on both occasions a single written concept, "Students who use drugs" to rate on the usual five scales. The pre-post changes are displayed in Figure 5, where the score for each character is the sum of all five "positive" scale ratings. For the simplistic concept "Students who use drugs," both the Film group and the Transcript group had more positive responses on the posttest than on the pretest. For all but character I, the Transcript group (broken line) had more positive responses to the statements on the posttest than on the pretest.

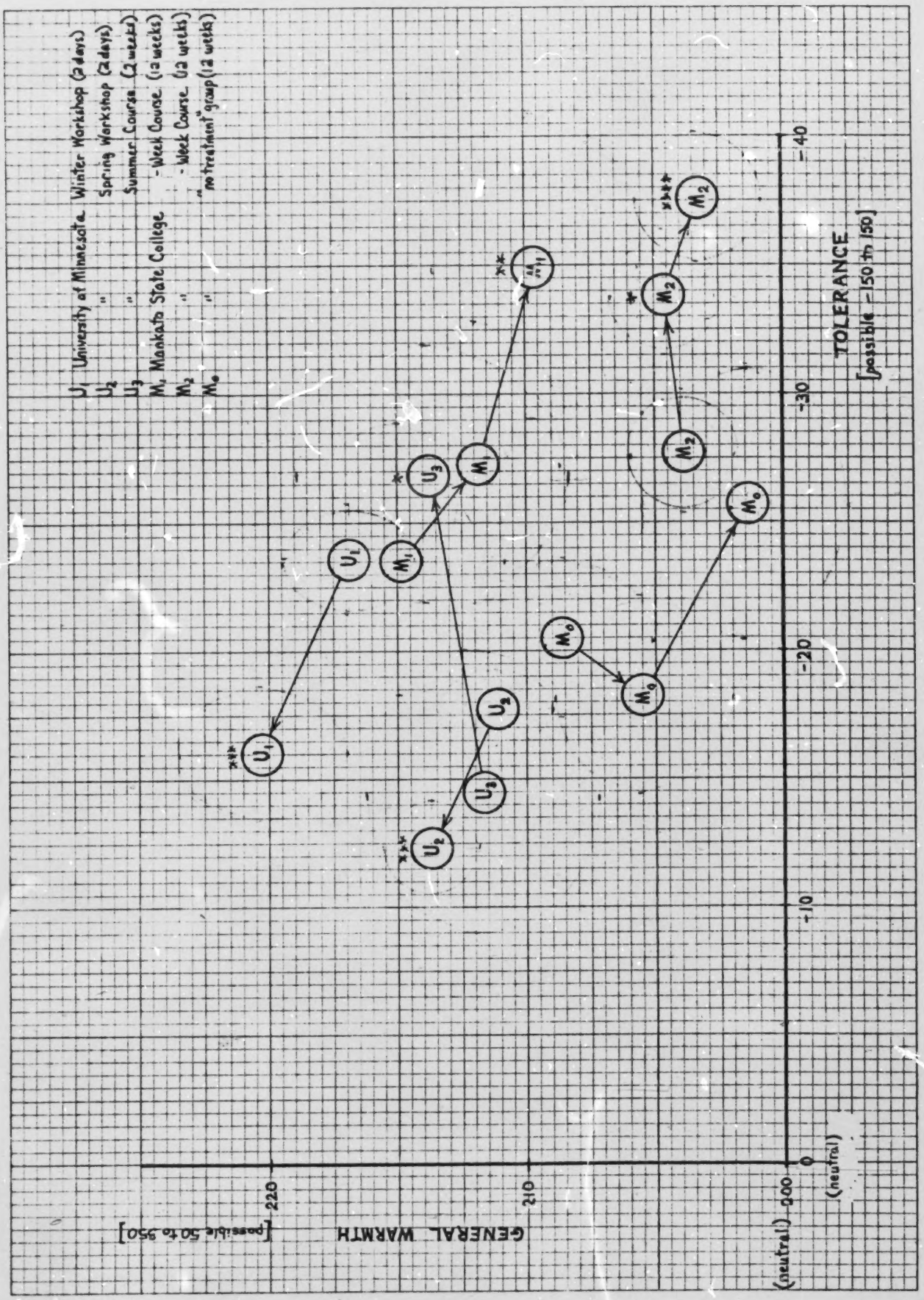
Table 4. Pre-Post Changes
(Revised Scores)

		"Warmth"					"Tolerance"				
GROUP	N	PRE	POST1	POST2	$t_{pre,1}$	$t_{pre,2}$	PRE	POST1	POST2	$t_{pre,1}$	$t_{pre,2}$
U_1	93	216.9	220.3		-1.35		-23.5	-16.1		-3.06***	
U_2	143	211.2	213.8		-1.55		-17.8	-12.4		-3.35***	
U_3	27	211.8	212.5		-0.12		-14.5	-26.7		2.40*	
M_1	32	214.9	211.9	209.6	1.03	1.10	-23.6	-27.2	-34.9	0.82	2.95**
M_0	47	208.7	205.5	201.5	1.05	2.23*	-20.7	-18.3	-25.8	-0.65	0.98
M_3	128	204.0	204.8	203.2	-0.35	0.35	-27.7	-34.0	-37.5	2.43*	3.64****

* p .05 (two-tailed)
** p .01 "
*** p .005 "
**** p .001 "

U_1: University of Minnesota Winter Workshop; 2 days, posttest at end of 2nd day.
U_2: University of Minnesota Spring Workshop; 2 days, posttest at end of 2nd day.
U_3: University of Minnesota Summer Course; 2 weeks, posttest at end of 2nd week.
M_1: Mankato State College Course; 12 weeks (6 of drugs); posttest after 6 & 12 weeks.
M_2: Mankato State College Course; 12 weeks (12 of drugs); posttest after 6 & 12 weeks.
M_0: Mankato State College Course; 12 weeks (no drug); posttest after 6 & 12 weeks.

Figure 4. Pre-Post Changes for Groups



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The happy view of improved tolerance is starkly contradicted, however, by the Film group results (solid line), where there is a clear contrast between positive increases for anti-drug characters II and IV vs. decreases for pro-drug characters I, III, and V. If one accepts the view that the film provokes stronger feelings and thereby more honest responses, then the conclusion is that the use of written stimuli misrepresents not only the magnitude, but even the direction of pre-post change in attitude. As suspected, subjects can learn what the approved verbalization is without actually changing their feelings in that direction.

The opposite directions of change between the two University of Minnesota 2-day workshops on the one hand and the four longer-term programs on the other suggest a highly tentative proposition: brief drug-education programs may diabuse participants of ignornace and fears that they had been harboring, and so produce a temporary enhancement of pro-drug attitudes -- but a more extensive experience may lead to a reformulation of anti-drug positions based on valid knowledge of drugs and users.

However, the negative-change groups were also made up of more "conservative" subjects -- health professionals and in-service teachers, etc., rather than college seniors as in the two workshops. So an alternative proposition would be that liberal and conservative types are simply confirmed in their predilections. This proposition suffers the difficulty of there being little difference in the initial position of the putative "liberals" and "conservatives."

The studies to date are inadequate to support firmly any generalizations at all, and such propositions as are advanced above must wait on more carefully controlled studies with more clearly identified samples. The Center for Educational Development is eager to cooperate with any researchers who would like to try the technique in drug attitude assessments or in evaluation of drug education programs.

Figure 5. Pre-Post Changes for Three Types of Attitude Targets